

## Index of Authors — 1993

Abdali, S.S. — See Mitsoulis, E.	147	Byerley, John J. — See Otu, Emmanuel O.	925
Abdul-Razzak, A., Shoukri, M. and Chan, A.M.C. — Two-Fluid Modelling of the Rewetting and Refilling of Hot Horizontal Tubes	358	Caple, Rod — See Sherritt, Richard G.	337
Adamopoulos, G. — See Nešić, S.	28	Carreau, P.J. — See De Kee, D.	183
Adnot, A. — See Shang, D.Y.	725	Carroll, John J. — See Jou, Fang-Yuan	264
Aguayo, A.T. — See Olazar, M.	189	Cavatorta, Omar N. — See Chiappori de del Giorgio, Ana	63
Ajersch, M. — See Zhu, S.	269	Chan, A.M.C. — See Abdul-Razzak, A.	358
Ali, Muhammad I., Sadatomi, Michio and Kawaji, Masahiro — Adiabatic Two-Phase Flow in Narrow Channels between Two Flat Plates	657	Chang, J.S. — See He, W.	366
Apel, M.L. and Torma, A.E. — Determination of Kinetics and Diffusion Coefficients of Metal Sorption on Ca-Alginate Beads	652	Changrani, Rajnish — See Subramanian, N.M.	525
Aracil, J. — See Coteron, A.	485	Chatani, T. — See Goto, S.	821
Aragaki, T. — See Kozicki, W.	347	Chattopadhyay, R. — See Halder, P.K.	3
Arai, Yasuhiko — See Kumagae, Yoshio	986	Chen, B.H. — See Liu, C.H.	464
Arandes, J.M. — See Olazar, M.	189	Chen, B.H. — See Liu, C.H.	460
Avedesian, M.M. — See Zou, X.	892	Chen, Bin — See Chen, Jianfeng	967
Baird, M.H.I., Rama Rao, N.V. and Shen, Z.J. — Oxygen Absorption in a Baffled Tank Agitated by Delta Paddle Impeller	195	Chen, Gantang — See Chen, Jianfeng	967
Baird, M.H.I. — See He, W.	366	Chen, Jianfeng, Chen, Bin and Chen, Gantang — Visualization of Meso- and Micro-mixing Status in Flow System by High Speed Stroboscopic Microscopic Photography	967
Baird, M.H.I. — See Zhu, S.	269	Chen, M. — See Rohani, S.	689
Bakhshi, N.N. — See Bisaria, M.K.	746	Chhabra, R.P. — See Jaiswal, A.K.	646
Bakhshi, Narendra N. — See Sharma, Ramesh K.	383	Chiappori de del Giorgio, Ana, Cavatorta, Omar N. and Böhm, Ursula — Mass Transfer in Tube Banks with Two-Phase Flow	63
Banković-Ilić, I.B. — See Skala, D.U.	817	Chidambaram, M. — Concentration Forcing Isothermal Plug-flow Reactors for Autocatalytic Reactions	974
Barry, JP. — See Jamaluddin, A.K.M.	377	Chidambaram, M. — Periodic Operation of Isothermal Plug-Flow Reactors With Input Multiplicities	477
Becker, H.A. — See Jia, Lufei	10	Chidambaram, M. — See Kumar, G. Pavan	766
Beeckmans, J.M. — See Ginestet, A.	177	Chmielowiec, J. — See Shang, D.Y.	725
Beenackers, A.A.C.M. — See Van Ede, C.J.	901	Choplin, L. — See Tecante, A.	859
Behie, Leo A. — See Monnery, Wayne D.	711	Chornet, E. — See Bilodeau, J.-F.	549
Behie, Leo A. — See Sherritt, Richard G.	337	Chornet, Esteban — See Thring, Ronald W.	116
Benzina, M., Ratel, A. et Lacoste, G. — Etude de l'influence des paramètres de fonctionnement d'un réacteur électrochimique à lit fixe conique	174	Chornet, Esteban — See Thring, Ronald W.	107
Bennington, C.P.J. and Thangavel, V.K. — The Use of a Mixing-Sensitive Chemical Reaction for the Study of Pulp Fibre Suspension Mixing	667	Chowdhury, Aminul — See Dalai, Ajay K.	75
Bergstrom, D.J. — See Nešić, S.	28	Chowdhury, S.N. and Kunzru, D. — Benzyl Diethyl Phosphite as a Coke Inhibitor during Naphtha Pyrolysis. Tubular Reactor Studies	873
Berk, D. — See El-Naas, M.H.	866	Chuang, K.T. — See Tong, S.	392
Bhat, Y.S. — See Parikh, P.A.	756	Code, R.K. — See Jia, Lufei	10
Bilbao, J. — See Olazar, M.	189	Corradini, Fulvio, Marchetti, Andrea, Tagliazucchi, Mara, Tassi, Lorenzo and Tosi, Giuseppe — Kinematic Viscosity Studies of the Binary Ethane-1,2-diol/N,N-Dimethylformamide Solvent System at Various Temperatures	124
Bilodeau, J.-F., Thérien, N., Proulx, P., Czernik, S. and Chornet, E. — A Mathematical Model of Fluidized Bed Biomass Gasification	549	Corriou, Jean-Pierre — See Iordache, Octavian	955
Bisaria, M.K., Bakhshi, N.N. and Ranganathan, R. — Nonhydrogenative Processing of a Saskatchewan Heavy Oil Under Mild Conditions Using Disposable Additives	746	Coteron, A., Sanchez, N., Martinez, M. and Aracil, J. — Optimisation of the Synthesis of an Analogue of Jojoba Oil Using a Fully Central Composite Design	485
Bishnoi, P. Raj — See Englezos, Peter	322	Czernik, S. — See Bilodeau, J.-F.	549
Bishnoi, P.R. — See Dholabhai, P.D.	68	Dadach, Zin-Eddine and Kaliaguine, Serge — Acid Hydrolysis of Cellulose. Part I. Experimental Kinetic Analysis	880
Bízek, V., Horček, J., Koušová, M., Komers, R., Procházka, J. and Heyberger, A. — Extraction of Phenols: II. Distribution Data for Binary and Multi-component Mixtures of Phenols, Countercurrent Extraction Performance and Model Validation	256	Dalai, Ajay K., Majumdar, Amitabha, Chowdhury, Aminul and Tollefson, Eric L. — The Effects of Pressure and Temperature on the Catalytic Oxidation of Hydrogen Sulfide in Natural Gas and Regeneration of the Catalyst to Recover the Sulfur Produced	75
Böhm, Ursula — See Chiappori de del Giorgio, Ana	63	Dalla Lana, I.G. — See Tong, S.	392
Bojkov, Bojan and Luus, Rein — Evaluation of the Parameters Used in Iterative Dynamic Programming	451	Damani, Ramesh, Powell, Robert L. and Hagen, Nils — Viscoelastic Characterization of Medium Consistency Pulp Suspensions	676
Bollen, A.M. — See Van Ede, C.J.	901	Das, Sudip Kumar — Water Flow Through Helical Coils in Turbulent Condition	971
Boulos, M. — See Li, R.	837		
Burns, D.L. — See Suppiah, S.	704		

Dash, S.R. and Rohani, S. - Iterative Parameter Estimation for Extraction of Crystallization Kinetics of Potassium Chloride from Batch Experiments . . . . .	539	Friedman, Yehudit - See Tamir, Abraham . . . . .	784
Datta, A. - See Halder, P.K. . . . .	3	Ganzeveld, K.J. and Janssen, L.P.B.M. - Twin Screw Extruders as Polymerization Reactors for a Free Radical Homo Polymerization . . . . .	411
Daugulis, Andrew J. - See Malinowski, Janusz J. . . . .	431	Garcia-Rejon, A. - See DiRaddo, R.W. . . . .	824
De Kee, D. and Carreau, P.J. - Friction Factors and Bubble Dynamics in Polymer Solutions . . . . .	183	Gasem, K.A.M., Ross, C.H. and Robinson, Jr., R.L. - Prediction of Ethane and CO <sub>2</sub> Solubilities in Heavy Normal Paraffins Using Generalized-Parameter Soave and Peng-Robinson Equations of State . . . . .	805
De, P. - See Pradhan, Anil K. . . . .	468	George, Albert E. - See Kokal, Sunil L. . . . .	130
Demopoulos, George P. - See Filippou, Dimitrios . . . . .	790	Gerritsen, A.W. - See Wolff, E.H.P. . . . .	83
Desborough, Lane and Harris, Thomas - Performance Assessment Measures for Univariate Feedforward/Feedback Control . . . . .	605	Gifford, W.A. - A Three-Dimensional Finite Element Analysis of the Effect of Reynolds Number on Extrudate Swell of Newtonian Liquids from Square Dies . . . . .	161
Deshpande, A.J. - See Rewatkar, V.B. . . . .	226	Ginestet, A., Guigon, P., Large, J.F., Sen Gupta, S. and Beeckmans, J.M. - Hydrodynamics of a Flowing Gas-Solids Suspension in a Tube at High Angles of Inclination . . . . .	177
Dholabhai, P.D., Kalogerakis, N. and Bishnoi, P.R. - Kinetics of Methane Hydrate Formation in Aqueous Electrolyte Solutions . . . . .	68	Goto, S., Chatani, T. and Matouq, M.H. - Hydration of 2-Methyl-2-Butene in Gas-Liquid Cocurrent Upflow and Downflow Reactors . . . . .	821
DiRaddo, R.W. and Garcia-Rejon, A. - Effect of Melt Temperature on the Final Thickness Distribution of Blow Moulded Parts . . . . .	824	Grén, Urban B. - See Ström, Krister H.U. . . . .	940
Dombrowski, N., Fourneny, E.A., Ookawara, S. and Riza, A. - The Influence of Reynolds Number on the Entry Length and Pressure Drop for Laminar Pipe Flow . . . . .	472	Guigon, P. - See Ginestet, A. . . . .	177
Dutt, N.V.K. - See Krishnakumari, B. . . . .	489	Guo, Tian-Min - See Wang, Li-Sheng . . . . .	591
Dutta, N.N. and Patil, G.S. - Effect of Phase Transfer Catalysts on the Interfacial Tension of Water/Toluene System . . . . .	802	Gupta, Yash P. - Characteristic Equations and Robust Stability of a Simplified Predictive Control Algorithm . . . . .	617
El-Naas, M.H., Munz, R.J. and Berk, D. - Pyrolysis of CANMET Coprocessing Residue in Argon/Hydrogen Plasma . . . . .	866	Hagen, Nils - See Damani, Ramesh . . . . .	676
Englezos, Peter, Kalogerakis, Nicolas and Bishnoi, P. Raj - A Systematic Approach for the Efficient Estimation of Interaction Parameters in Equations of State Using Binary VLE Data . . . . .	322	Halder, P.K., Datta, A. and Chattopadhyay, R. - Combustion of Single Char Particles in a Turbulent Fluidized Bed . . . . .	3
Evans, G.J., Mirbod, S.M. and Jervis, R.E. - The Volatilization of Iodine Species over Dilute Iodide Solutions . . . . .	761	Halgeri, A.B. - See Parikh, P.A. . . . .	756
Fan, Chonglun, Piron, D.L., Meilleur, M. and Marin, L.-P. - Hydrogen Evolution in Alkaline Solution on Electrolytic Nickel-Cobalt and Nickel-Iron Deposited with Different Bath Compositions and Current Densities . . . . .	570	Han, Buxing and Peng, Ding-Yu - A Group-Contributed Correlation for Predicting the Acentric Factors of Organic Compounds . . . . .	332
Farag, Ihab H. and Tsai, Kun-Yung - Surface-to-Suspension Heat Transfer Model in Lean Gas-Solid Freeboard Flow . . . . .	514	Harris, Thomas - See Desborough, Lane . . . . .	605
Farelo, F., von Brachel, G. and Offermann, H. - Solid-Liquid Equilibria in the Ternary System NaCl-KCl-H <sub>2</sub> O . . . . .	141	Hartland, S. - See Rincón-Rubio, L.M. . . . .	844
Feng, Guo-Xiang and Mather, Alan E. - Solubility of H <sub>2</sub> S in <i>n</i> -Hexadecane at Elevated Pressure . . . . .	327	He, W., Baird, M.H.I. and Chang, J.S. - The Effect of Electric Field on Mass Transfer From Drops Dispersed in a Viscous Liquid . . . . .	366
Ferworn, Kevin A., Mehrotra, Anil K. and Svrcik, William Y. - Measurement of Asphaltene Agglomeration from Cold Lake Bitumen Diluted with <i>n</i> -Alkanes . . . . .	699	Heyberger, A. - See Bízek, V. . . . .	256
Filippou, Dimitrios and Demopoulos, George P. - On the Variable Dissolution Kinetics of Zinc Ferrite in Acid Media . . . . .	790	Hill, G.A. - See Fraser, Randall D. . . . .	419
Fonade, C. - See Simon, M. . . . .	507	Hill, G.A. - See Thatipamala, R. . . . .	977
Foulkes, F.R. - See Marsen, J. . . . .	218	Hinatsu, J.T. - See Marsen, J. . . . .	218
Fourneny, E.A. - See Dombrowski, N. . . . .	472	Ho, Ch'un-Sung and Shih, Shin-Min - Characteristics and SO <sub>2</sub> Capture Capacities of Sorbents Prepared from Products of Spray-Drying Flue Gas Desulfurization . . . . .	934
Fraser, Randall D. and Hill, G.A. - Hydrodynamic Characteristics of a Spinning Sparger, External Loop Airlift Bioreactor . . . . .	419	Horáček, J. - See Bízek, V. . . . .	256

Jia, Lufei, Becker, H.A. and Code, R.K. - Devolatilization and Char Burning of Coal Particles in a Fluidized Bed Combustor	10	Larachi, Faïçal, Laurent, André, Wild, Gabriel et Midoux, Noël - Effet de la pression sur la transition ruisselant-pulsé dans les réacteurs catalytiques à lit fixe arrosé	319
Joshi, J.B. - See Rewatkar, V.B.	278	Large, J.F. - See Ginestet, A.	177
Joshi, J.B. - See Rewatkar, V.B.	226	Laurent, André - Voir Larachi, Faïçal	319
Jou, Derming - See Yang, Ru	533	Lazić, M.L. - See Skala, D.U.	817
Jou, Fang-Yuan, Carroll, John J., Mather, Alan E. and Otto, Frederick D. - The Solubility of Carbon Dioxide and Hydrogen Sulfide in a 35 wt% Aqueous Solution of Methylidethanolamine	264	Lédié, J. et Villermoux, J. - Comportement thermique et chimique de particules solides subissant un réaction de décomposition endothermique sous l'action d'un flux de chaleur externe	209
Jutan, Arthur - See Katende, Edward	625	Legentilhomme, P. et Legrand, J. - Modélisation numérique du transfert de matière dans un écoulement annulaire faiblement tourbillonnaire non-entretenu	299
Kaliaguine, S. - See Shang, D.Y.	725	Legrand, J. - Voir Legentilhomme, P.	299
Kaliaguine, Serge - See Dadach, Zin-Eddine	880	Li, R. and Boulos, M. - Modeling of Unsteady Flow Around Accelerating Sphere at Moderate Reynolds Numbers	837
Kalogerakis, N. - See Dholabhai, P.D.	68	Lidén, Gunnar - See Ryding, Per-Ola	911
Kalogerakis, Nicolas - See Englezos, Peter	322	Liu, C.H. and Chen, B.H. - Characteristics of Reciprocating Screen-Plate Bubble Column with Dilute Alcohol Solutions	464
Kan, M. - See Liu, C.H.	460	Liu, C.H., Kan, M. and Chen, B.H. - A Correlation of Two-Phase Pressure Drop in Screen-Plate Bubble Column	460
Katende, Edward and Jutan, Arthur - A New Constrained Self-Tuning PID Controller	625	Lounes, Mustapha and Thibault, Jules - Hydrodynamics and Power Consumption of a Reciprocating Plate Gas-Liquid Column	497
Kawaji, Masahiro - See Ali, Muhammad I.	657	Lu, Benjamin C.-Y. - See Ochi, Kenji	982
Kawamura, Yuji - See Shinagawa, Hideo	238	Luus, Rein - See Bojkov, Bojan	451
Kessler, Wolfgang R., Popović, Milan K. and Robinson, Campbell W. - Xanthan Production in an External-Circulation-Loop Airlift Fermenter	101	Majumdar, Amitabha - See Dalai, Ajay K.	75
Kojima, Kazuo - See Ochi, Kenji	982	Malinowski, Janusz J. and Daugulis, Andrew J. - Liquid-liquid and Vapour-liquid Behaviour of Oleyl Alcohol Applied to Extractive Fermentation Processing	431
Kokal, Sunil L. - Sayegh, Selim G. and George, Albert E. - Phase Equilibria of Crude Oils Using the Continuous Thermodynamics Approach	130	Marchetti, Andrea - See Corradini, Fulvio	124
Komers, R. - See Bízek, V.	256	Marin, L.-P. - See Fan, Chonglun	570
Koušová, M. - See Bízek, V.	256	Markatos, N.C. - See Mitsoulis, E.	147
Kozicki, W. and Kuang, P.Q. - Excess Pressure Losses in Capillary Flows	833	Marsen, J., Hinatsu, J.T., Smith, J.W. and Foulkes, F.R. - Electrochemical Oxidation of Oxalate in Alkaline Solutions	218
Kozicki, W. and Kuang, P.Q. - Prediction of Lower/Upper Limiting Viscosities	329	Martinez, M. - See Coterón, A.	485
Kozicki, W., Kuang, P.Q., Aragaki, T. and Yim, S.P. - Surface Phenomena in Capillary Flow of Polymer Solutions	347	Masliyah, Jacob H. - See Yan, Yuhua	852
Kresta, Suzanne M. and Wood, Philip E. - The Mean Flow Field Produced by a 45° Pitched Blade Turbine: Changes in the Circulation Pattern Due to Off Bottom Clearance	42	Mather, Alan E. - See Jou, Fang-Yuan	264
Krishnakumari, B., Naseem, Shanta and Dutt, N.V.K. - A Method of Estimating the Standard Gibbs Free Energy of Formation	489	Mather, Alan E. - See Feng, Guo-Xiang	327
Krishnan, S.V. and Sotirchos, Stratis V. - A Variable Diffusivity Shrinking-Core Model and its Application to the Direct Sulfation of Limestone	734	Matouq, M.H. - See Goto, S.	821
Krishnan, S.V. and Sotirchos, Stratis. V. - Sulfation of High Purity Limestones under Simulated PFBC Conditions	244	Mehrotra, Anil K. - See Sherritt, Richard G.	337
Kuang, P.Q. - See Kozicki, W.	329, 347, 833	Mehrotra, Anil K. - See Ferworn, Kevin A.	699
Kumagae, Yoshio and Arai, Yasuhiko - Extension of Håla's Model to Correlate Isobaric Vapor-Liquid Equilibria Containing Calcium Chloride	986	Meilleur, M. - See Fan, Chonglun	570
Kumar, A. - See Rincón-Rubio, L.M.	844	Meyer, E. - See Proust, P.	292
Kumar, Anil - A Simple Correlation for Estimating Viscosities of Solutions of Salts in Aqueous, Non-aqueous and Mixed Solvents Applicable to High Concentration, Temperature and Pressure	948	Miadonye, A. - See Puttagunta, V.R.	447, 998
Kumar, G. Pavan, Sastry, I.V.K. Subrahmanyam and Chidambaram, M. - Periodic Operation of a Bioreactor with Input Multiplicities	766	Miao, H.J. and Piron, D.L. - Electrodeposition of Catalytically Active Nickel for the Oxygen Evolution Reaction - Effects of Anionic Composition	564
Kunzru, D. - See Chowdhury, S.N.	873	Midoux, Noël - Voir Larachi, Faïçal	319
Kurdikar, Somdatt - See Subramanian, N.M.	525	Mirbod, S.M. - See Evans, G.J.	761
Lacoste, G. - Voir Benzina, M.	174	Mitsoulis, E., Abdali, S.S. and Markatos, N.C. - Flow Simulation of Herschel-Bulkley Fluids through Extrusion Dies	147

Montagna, Jorge Marcelo - Problem-Oriented Modules for Process Simulation. Resolution Strategies for Simulation and Optimization .....	634	Procházka, J. - See Bízek, V. ....	256
Munz, R.J. - See El-Naas, M.H. ....	866	Proulx, P. - See Bildeau, J.-F. ....	549
Nakayama, A. and Shenoy, A.V. - Non-Darcy Forced Convective Heat Transfer in a Channel Embedded In a Non-Newtonian Inelastic Fluid-Saturated Porous Medium .....	168	Proust, P., Meyer, E. and Vera, J.H. - Calculation of Pure Compound Saturated Enthalpies and Saturated Volumes With the PRSV Equation of State. Revised $\kappa_1$ Parameters for Alkanes .....	292
Narayan, Rashmi - See Subramanian, N.M. ....	525	Pudjiono, P.I. and Tavare, N.S. - Residence Time Distribution Analysis From a Continuous Couette Flow Device Around Critical Taylor Number ..	312
Naseem, Shanta - See Krishnakumari, B. ....	489	Puttagunta, V.R., Singh, B. and Miadonye, A. - Correlation of Bitumen Viscosity with Temperature and Pressure .....	447,998
Nazarko, T.W. - See Jamaluddin, A.K.M. ....	377	Rajeswara Rao, T. - Kinetic Parameters for Decomposition of Calcium Carbonate .....	481
Nesić, S., Adamopoulos, G., Postlethwaite, J. and Bergstrom, D.J. - Modelling of Turbulent Flow and Mass Transfer with Wall Function and Low-Reynolds Number Closures .....	28	Rajiah, A. - See Ravikumar, Y.V.L. ....	828
Nguyen, Q.T. and Watkinson, A.P. - Sulphur Capture During Gasification of Oil Sand Cokes .....	401	Rama Rao, N.V. - See Baird, M.H.I. ....	195
Niklasson, Claes - See Ryding, Per-Ola .....	911	Ramakrishna, M. - See Ravikumar, Y.V.L. ....	828
Nitheanandan, T. and Soliman, H.M. - Influence of Tube Inclination on the Flow Regime Boundaries of Condensing Steam .....	35	Ranganathan, R. - See Bisaria, M.K. ....	746
Ochi, Kenji, Momose, Masatoshi, Kojima, Kazuo and Lu, Benjamin C.-Y. - Determination of Mutual Solubilities in Aniline + <i>n</i> -Hexane and Furfural + Cyclohexane Systems by a Laser Light Scattering Technique .....	982	Rao, K. Remananda - Prediction of Liquid Film Mass Transfer Coefficients in Packed Columns Using Liquid Holdup .....	685
Offermann, H. - See Farelo, F. ....	141	Ratel, A. - Voir Benzina, M. ....	174
Okuyama, Kikuo - See Shinagawa, Hideo .....	238	Ravikumar, Y.V.L., Ramakrishna, M., Rajiah, A. and Veeranna, D. - Bubble Temperature Data for Phenol-Alcohol Systems: Phenol- <i>i</i> -Amyl Alcohol and Phenol- <i>n</i> -Amyl Alcohol Systems .....	828
Olazar, M., San José, M.J., Peñas, F.J., Aguayo, A.T., Arandes, J.M. and Bilbao, J. - A Model for Gas Flow in Jet Spouted Beds .....	189	Remananda Rao, K. - See Padmavathi, G. ....	94
Ookawara, S. - See Dombrowski, N. ....	472	Rewatkar, V.B. and Joshi, J.B. - Role of Sparger Design on Gas Dispersion in Mechanically Agitated Gas-Liquid Contactors .....	278
Orbey, Hasan and Sandler, Stanley I. - The Prediction of the Viscosity of Liquid Hydrocarbons and Their Mixtures as a Function of Temperature and Pressure .....	437	Rewatkar, V.B., Deshpande, A.J., Pandit, A.B. and Joshi, J.B. - Gas Hold-up Behavior of Mechanically Agitated Gas-Liquid Reactors Using Pitched Blade Downflow Turbines .....	226
Otto, Frederick D. - See Jou, Fang-Yuan .....	264	Rincón-Rubio, L.M., Kumar, A. and Hartland, S. - Characterization of Flooding in a Wirz Extraction Column .....	844
Otu, Emmanuel O., Byerley, John J. and Robinson, Campbell W. - Kinetic Modelling of Gold Cyanide Multi-Cycle Adsorption and Elution Using Activated Carbon in the Presence of Foulants .....	925	Rinker, R.G. - See Yadav, Rajiv .....	202
Overend, Ralph P. - See Thring, Ronald W. ....	116	Riza, A. - See Dombrowski, N. ....	472
Overend, Ralph P. - See Thring, Ronald W. ....	107	Robinson, Campbell W. - See Kessler, Wolfgang R. ....	101
Padmavathi, G. and Remananda Rao, K. - Influence of Geometry on Gas Holdups in a Reversed Flow Jet Loop Reactor .....	94	Robinson, Campbell W. - See Otu, Emmanuel O. ....	925
Pandit, A.B. - See Rewatkar, V.B. ....	226	Robinson, Jr., R.L. - See Gasem, K.A.M. ....	805
Parichha, R.K. - See Pradhan, Anil K. ....	468	Rohani, S. and Chen, M. - Aggregation and Precipitation Kinetics of Canola Protein by Isoelectric Precipitation .....	689
Parikh, P.A., Subrahmanyam, N., Bhat, Y.S. and Halgeri, A.B. - Kinetics of Cumene Synthesis Over Ferrisilicate of MFI Structure .....	756	Rohani, S. - See Dash, S.R. ....	539
Parpar, Boaz - See Tamir, Abraham .....	784	Rohani, S. - See Thatipamala, R. ....	977
Patil, G.S. - See Dutta, N.N. ....	802	Ross, C.H. - See Gasem, K.A.M. ....	805
Pelton, R.H. - See Zhu, S. ....	269	Round, G.F. and Yu, S. - Entrance Laminar Flows of Viscoplastic Fluids in Concentric Annuli .....	642
Peng, Ding-Yu - See Han, Buxing .....	332	Ryding, Per-Ola, Niklasson, Claes and Lidén, Gunnar - Anaerobic Fermentation of Xylose by <i>Pichia stipitis</i> : The Effect of Forced Cycling of pH .....	911
Peñas, F.J. - See Olazar, M. ....	189	Sadatomi, Michio - See Ali, Muhammad I. ....	657
Piron, D.L. - See Miao, H.J. ....	564	Sadka, Sason - See Tamir, Abraham .....	784
Piron, D.L. - See Fan, Chonglun .....	570	Salcedo, R.L. - Collection Efficiencies and Particle Size Distributions from Sampling Cyclones - Comparison of Recent Theories with Experimental Data .....	20
Popović, Milan K. - See Kessler, Wolfgang R. ....	101	San José, M.J. - See Olazar, M. ....	189
Postlethwaite, J. - See Nesić, S. ....	28	Sanchez, N. - See Coterón, A. ....	485
Powell, Robert L. - See Damani, Ramesh .....	676	Sandler, Stanley I. - See Orbey, Hasan .....	437
Pradhan, Anil K., Parichha, R.K. and De, P. - Gas Hold-Up in Non-Newtonian Solutions in a Bubble Column with Internals .....	468	Sankholkar, Yatin - See Subramanian, N.M. ....	525
		Sastry, I.V.K. Subrahmanyam - See Kumar, G. Pavan .....	766
		Saville, Bradley A. - See Venugopal, Ramakrishnan .....	917
		Sayegh, Selim G. - See Kokal, Sunil L. ....	130

Sen Gupta, S. - See Ginestet, A. ....	177
Serrano, David P. - See Uguina, Maria A. ....	558
Shang, D.Y., Adnot, A., Kaliaguine, S. and Chmielowiec, J. - An XPS Study of the Sulfidation-Regeneration Cycle of an Hydroprocessing Catalyst	725
Sharma, Ramesh K. and Bakhshi, Narendra N. - Catalytic Upgrading of Fast Pyrolysis Oil Over HZSM-5 ....	383
Shen, Z.J. - See Baird, M.H.I. ....	195
Shenoy, A.V. - See Nakayama, A. ....	168
Sheppard, J.D. - Improved Volume Control for Self-Cycling Fermentations ....	426
Sherritt, Richard G., Caple, Rod, Behie, Leo A. and Mehrotra, Anil K. - The Movement of Solids Through Flighted Rotating Drums. Part I: Model Formulation ....	337
Shih, Shin-Min - See Ho, Ch'un-Sung ....	934
Shinagawa, Hideo, Okuyama, Kikuo and Kawamura, Yuji - Heterogenous Nucleation of Organic Vapours on a Cold Substrate ....	238
Shoukri, M. - See Abdul-Razzak, A. ....	358
Simon, M. and Fonade, C. - Experimental Study of Mixing Performances Using Steady and Unsteady Jets ....	507
Singh, B. - See Puttagunta, V.R. ....	447, 998
Skala, D.U., Veljković, V.B., Janjić, V.V., Lazić, M.L. and Banković-Ilić, I.B. - Gas Holdup in a Gas-Liquid-Solid Reciprocating Plate Column ..	817
Smith, J.W. - See Marsen, J. ....	218
Soliman, H.M. - See Nitheanandan, T. ....	35
Sotelo, Jose L. - See Uguina, Maria A. ....	558
Sotirchos, Stratis. V. - See Krishnan, S.V. ....	734
Sotirchos, Stratis. V. - See Krishnan, S.V. ....	244
Ström, Krister H.U. and Grén, Urban B. - A Study of Vapour-Liquid Equilibria for the Binary Mixtures HCFC22/CFC114, HCFC22/HCFC142b and HCFC22/HFC152a ....	940
Subrahmanyam, N. - See Parikh, P.A. ....	756
Subramanian, N.M., Changrani, Rajnish, Narayan, Rashmi, Vishwanath, Shekhar, Kurdikar, Somdatt, Subramanian, V. and Sankholkar, Yatin - Performance of a Divided Flow Exchanger ....	525
Subramanian, V. - See Subramanian, N.M. ....	525
Sundararajan, T. - See Jaiswal, A.K. ....	646
Suppiah, S. and Burns, D.L. - Hydrogen Sulphide Oxidation Over Teflon Treated Activated Alumina and Titanium Dioxide Catalysts ....	704
Svrcek, William Y. - See Ferworn, Kevin A. ....	699
Svrcek, William Y. - See Monnery, Wayne D. ....	711
Tagliazucchi, Mara - See Corradini, Fulvio ....	124
Tamir, Abraham - See Ziv, Abraham ....	771
Tamir, Abraham, Ziv, Abraham, Zeigerson, Ehud, Parpar, Boaz, Tovim, Erez, Sadka, Sason, Zevin, Lev and Friedman, Yehudit - Calcination of Phosphate in Impinging Streams. Part II. Phosphates with High Organic Matter and with Pulverized Coal .	784
Tassi, Lorenzo - See Corradini, Fulvio ....	124
Tavare, N.S. - See Pudjiono, P.I. ....	312
Tecante, A. and Choplin, L. - Gas-Liquid Mass Transfer in Non-Newtonian Fluids in a Tank Stirred with a Helical Ribbon Screw Impeller ....	859
Thangavel, V.K. - See Bennington, C.P.J. ....	667
Thatipamala, R., Hill, G.A. and Rohani, S. - Absorption of Radiation by Substances at "High" Concentrations: A New Equation and Process Monitoring Applications ....	977
Thérien, N. - See Bilodeau, J.-F. ....	549
Thibault, Jules - See Lounes, Mustapha ....	497
Thring, Ronald W., Chornet, Esteban and Overend, Ralph P. - Fractionation of Woodmeal by Prehydrolysis and Thermal Organosolv. Process Strategy, Recovery of Constituents, and Solvent Fractionation of Lignins so Produced ....	116
Thring, Ronald W., Chornet, Esteban and Overend, Ralph P. - Thermolysis of Glycol Lignin in the Presence of Tetralin ....	107
Tollefson, Eric L. - See Dalai, Ajay K. ....	75
Tondeur, Daniel - See Iordache, Octavian ....	955
Tong, S., Dalla Lana, I.G. and Chuang, K.T. - Kinetic Modelling of the Hydrolysis of Carbonyl Sulfide Catalyzed by Either Titania or Alumina ....	392
Torma, A.E. - See Apel, M.L. ....	652
Tosi, Giuseppe - See Corradini, Fulvio ....	124
Tovim, Erez - See Tamir, Abraham ....	784
Towers, M. - See Zhu, S. ....	269
Tsai, Kun-Yung - See Farag, Ihab H. ....	514
Uguina, Maria A., Sotelo, Jose L. and Serrano, David P. - Roles of ZSM-5 Modifier Agents in Selective Toluene Disproportionation ....	558
Van den Bleek, C.M. - See Wolff, E.H.P. ....	83
Van Ede, C.J., Bollen, A.M. and Beenackers, A.A.C.M. - Analytical Effectiveness Factor Calculations Concerning Product-Inhibited Fermentations Associated With Biofilm Growth and Maintenance	901
Van Heiningen, A.R.P. - See Zou, X. ....	892
Veeranna, D. - See Ravikumar, Y.V.L. ....	828
Veljkovic, V.B. - See Skala, D.U. ....	817
Venugopal, Ramakrishnan and Saville, Bradley A. - The Effect of Oxygen Upon the Kinetics of Glucose Oxidase Inactivation ....	917
Vera, J.H. - See Proust, P. ....	292
Villermaux, J. - Voir Léde, J. ....	209
Vishwanath, Shekhar - See Subramanian, N.M. ....	525
Von Brachel, G. - See Farelo, F. ....	141
Wang, Li-Sheng and Guo, Tian-Min - A Cubic Simplified Perturbed Hard-Chain Equation of State for Fluids with Chainlike Molecules ....	591
Watkinson, A.P. - See Nguyen, Q.T. ....	401
Wild, Gabriel - Voir Larachi, Faïçal ....	319
Wolff, E.H.P., Gerritsen, A.W. and Van den Bleek, C.M. - Multiple Reactor Testing of a Synthetic Sorbent for Regenerative Sulfur Capture in Fluidized Bed Combustion of Coal ....	83
Wood, Philip E. - See Kresta, Suzanne M. ....	42
Woods, Donald R. - See Wright, David G. ....	575
Wright, David G. and Woods, Donald R. - Evaluation of Capital Cost Data: Part 7: Liquid Waste Disposal With Emphasis on Physical Treatment ....	575
Yadav, Rajiv and Rinker, R.G. - Steady-State Methanation Kinetics over a Ni/Al <sub>2</sub> O <sub>3</sub> Catalyst ....	202
Yan, Wei-Mon - Mixed Convection Heat and Mass Transfer in a Vertical Channel with Film Evaporation ....	54
Yan, Yuhua and Masliyah, Jacob H. - Effect of Oil Viscosity on the Rheology of Oil-in-Water Emulsions with Added Solids ....	852

Yang, Ru and Jou, Derning - Heat and Mass Transfer on the Wavy Film Absorption Process .....	533	Ziv, Abraham and Tamir, Abraham - Calcination of Phosphate in Impinging Streams. Part I. Development, Theory and Modeling .....	771
Yim, S.P. - See Kozicki, W. ....	347	Ziv, Abraham - See Tamir, Abraham .....	784
Yu, S. - See Round, G.F. ....	642	Zou, X., Avedesian, M.M. and van Heiningen, A.R.P. - Carbon Monoxide Reduction of Sodium Sulfate Mixed with Sodium Titanate .....	892
Zeigerson, Ehud - See Tamir, Abraham .....	784		
Zevin, Lev - See Tamir, Abraham .....	784		
Zhu, S., Pelton, R.H., Ajersch, M., Towers, M. and Baird, M.H.I. - Measurement of Air Bubble Size Using Densitometer .....	269		

**The Editors are grateful to the following reviewers for their assistance during the period November 1, 1992 to October 31, 1993**

Adesina, A.A., University of New South Wales, NSW, Australia	Berk, D., McGill University, Montreal, Quebec	Chang, H.-C., University of Notre Dame, Notre Dame, IN
Agathos, S.N., Rutgers University, Piscataway, NJ	Berman, N.S., Arizona State University, Tempe, AR	Chao, K.C., Purdue University, West Lafayette, IN
Aguda, B., University of Waterloo, Waterloo, ON	Berruti, F., University of Calgary, Calgary, AB	Chaouki, J., Ecole Polytechnique de Montréal, Montréal, Québec
Al Tawel, A.M., Technical University of Nova Scotia, Halifax, NS	Bertrand, J., ENSIGC, Toulouse, France	Chaplin, R.A., University of New Brunswick, Fredericton, NB
Amouroux, J., Université Pierre et Marie Curie, Paris, France	Bhatia, S., Indian Institute of Technology, Kanpur, India	Chapman, W.G., Rice University, Houston, TX
Amphlett, J.C., Royal Military College of Canada, Kingston, ON	Bhatia, S.K., Indian Institute of Technology, Bombay, India	Chatzis, I., University of Waterloo, Waterloo, ON
Amyotte, P.R., Technical University of Nova Scotia, Halifax, NS	Bhattacharyya, B.C., Indian Institute of Technology, Kharagpur, India	Chisti, Y., University of Waterloo, Waterloo, ON
Anderson, W.A., University of Waterloo, Waterloo, ON	Bishnoi, P.R., University of Calgary, Calgary, AB	Chuang, K.T., University of Alberta, Edmonton, AB
Arastoopour, H., Illinois Institute of Technology, Chicago, IL	Bouchillon, C.W., Mississippi State University, Mississippi State, MS	Clausse, D., Université de Technologie de Compiègne, Compiègne, France
Arnold, D.W., University of Alabama, Tuscaloosa, AL	Boulos, M.I., Université de Sherbrooke, Sherbrooke, Québec	Clements, L.D., University of Nebraska, Lincoln, NE
Asfour, A.F.A., University of Windsor, Windsor, ON	Bourne, J.R., E.T.H., Zürich, Switzerland	Cluett, W.R., University of Toronto, Toronto, ON
Babu, S.V., Clarkson University, Potsdam, NY	Bousfield, D.W., University of Maine, Orono, ME	Co, A., University of Maine, Orono, ME
Bacon, D.W., Queen's University, Kingston, ON	Bowen, B.D., University of British Columbia, Vancouver, BC	Co, T.B., Michigan Technology University, Houghton, MI
Badakhshan, A., University of Calgary, Calgary, AB	Branson, R., University of British Columbia, Vancouver, BC	Collier, J.R., Louisiana State University, Baton Rouge, LA
Baird, D.G., Virginia Polytechnic Institute and State University, Blacksburg, VA	Brereton, C.M.H., University of British Columbia, Vancouver, BC	Collins, D.J., University of Louisville, Louisville, KY
Baird, M.H.I., McMaster University, Hamilton, ON	Briens, C.L., University of Western Ontario, London, ON	Conlisk, A.T., Ohio State University, Columbus, OH
Bakhshi, N.N., University of Saskatchewan, Saskatoon, SK	Brodkey, R.S., Ohio State University, Columbus, OH	Cooke, N.E., McGill University Montreal, Quebec
Balakotaiah, V., University of Houston, Houston, TX	Brown, J.R., CANMET, Ottawa, ON	Cooper, D., Lakehead University, Thunder Bay, ON
Balke, S.T., University of Toronto, Toronto, ON	Budman, H., University of Waterloo, Waterloo, ON	Cooper, D.J., University of Connecticut, Storrs, CT
Baltus, R.E., Clarkson University, Potsdam, NY	Bui, R.T., Université du Québec à Chicoutimi, Chicoutimi, Québec	Cooper, W.C., University of British Columbia, Vancouver, BC
Barham, D., University of Toronto, Toronto, ON	Butler, R.M., University of Calgary, Calgary, AB	Cormack, D.E., University of Toronto, Toronto, ON
Barron, C.H. Jr., Clemson University, Clemson, SC	Byerley, J.J., University of Waterloo, Waterloo, ON	Corripio, A.B., Louisiana State University, Baton Rouge, LA
Becker, H.A., Queen's University, Kingston, ON	Cai, P., Ohio State University, Columbus, OH	Cott, B., Shell Products Ltd., Corunna, ON
Bequette, B.W., Rensselaer Polytechnic Institute, Troy, NY	Calabrese, R.V., University of Maryland, College Park, MD	Crotogino, R.H., Pulp and Paper Institute of Canada, Pointe Claire, Quebec
Berger, D.J., Alberta Research Council, Devon, AB	Carr, N.L., Blazier Dr., Wexford, PA	Cyr, T., AOSTRA, Edmonton, AB
Bergougnou, M., University of Western Ontario, London, ON	Carrasco, F., Université du Québec à Trois Rivières, Trois Rivières, Québec	Dai, P.-S.E., Texaco Port Arthur Research Laboratories, Port Arthur, TX
Beris, A.N., University of Delaware, Newark, DE	Carreau, P.J., Ecole Polytechnique de Montréal, Montréal, Québec	Dalai, A., University of Alberta, Edmonton, AB
	Chakma, A., University of Calgary, Calgary, AB	Dalla Lana, I.G., University of Alberta, Edmonton, AB
	Chan, P.C.H., University of Missouri-Columbia, Columbia, MO	Dam-Johansen, K., Technical University of Denmark, Lyngby, Denmark

Davis, M.E., California Institute of Technology, Pasadena, CA

Dawodu, O.F., University of British Columbia, Vancouver, BC

Dawson, P.S.S., Wiggins Ave., Saskatoon, SK

De Las, H.I., University of Western Ontario, London, ON

Deckwer, W.-D., GBF, Braunschweig, Germany

Decourcy, W.J., University of Saskatchewan, Saskatoon, SK

DeKee, D.C.R., Université de Sherbrooke, Sherbrooke, Québec

Delmon, B., Université Catholique de Louvain, Louvain-la-Neuve, Belgium

Dervakos, G.A., UMIST, Manchester, U.K.

Dickson, J.M., McMaster University, Hamilton, ON

Diks, R.M.M., Eindhoven University of Technology, Breda, NL

Dimmel, D.R., Institute of Paper Science and Technology, Atlanta, GA

Dixon, A.G., Worcester Polytechnic Institute, Worcester, MA

Dixon, D.J., South Dakota School of Mines and Technology, Rapid City, SD

Do, D.D., University of Queensland, Queensland, Australia

Dochain, D., Ecole Polytechnique de Montréal, Montréal, Québec

Dodds, J.A., ENSIC, INPL, Nancy, France

Douglas, P.L., University of Waterloo, Waterloo, ON

Drahos, J., Czech Academy of Science, Praha, Czech Republic

Dudukovic, M.P., Washington University, St. Louis, MO

Duever, T., University of Waterloo, Waterloo, ON

Dunn, I.J., E.T.H., Zürich, Switzerland

Edgar, T.F., University of Texas at Austin, Austin, TX

Ehrland, P., Institute für Angewandte Thermo- und Fluideodynamik, Karlsruhe, Germany

Eic, M., University of New Brunswick, Fredericton, NB

El-Halwagi, M., Auburn University, Auburn, AL

Ely, J.F., National Bureau of Standards, Boulder, CO

Englezos, P., University of British Columbia, Vancouver, BC

Epstein, N., University of British Columbia, Vancouver, BC

Ernst, W.R., Georgia Institute of Technology, Atlanta, GA

Farelo, F., Instituto Superior Técnico, Lisboa, Portugal

Fisher, R.J., University of Mississippi, University, MS

Floudas, C.A., Princeton University, Princeton, NJ

Fogler, H.S., University of Michigan, Ann Arbor, MI

Foley, H.C., University of Delaware, Newark, DE

Forney, L.J., Georgia Institute of Technology, Atlanta, GA

Fort, I., Czech Technical University, Praha, Czech Republic

Freire, J.T., Universidade Federal de São Carlos, São Carlos, Brazil

Fujimoto, K., The University of Tokyo, Tokyo, Japan

Freitag, N., Saskatchewan Research Council, Regina, SK

Furter, W.F., Royal Military College of Canada, Kingston, ON

Garcia-Calvo, E., Universidad de Alcalá, Alcalá de Henares, Spain

Garred, L.J., Lakehead University, Thunder Bay, ON

Gates, B.C., University of Delaware, Newark, DE

Gibilaro, L.G., University College London, London, UK

Glasser, D., University of Witwatersrand, Johannesburg, Republic of South Africa

Gloor, P.E., McMaster University, Hamilton, ON

Godfrey, J.C., University of Bradford, Bradford, U.K.

Gogolek, P.E.G., Queen's University, Kingston, ON

Golding, J.A., University of Ottawa, Ottawa, ON

Goldman, S., University of Guelph, Guelph, ON

Gormely, L.S., University of British Columbia, Vancouver, BC

Grace, J.R., University of British Columbia, Vancouver, BC

Graham, W.R.C., AECL, Chalk River, ON

Gray, M.R., University of Alberta, Edmonton, AB

Gray, N.C.C., ICI Canada Inc., Mississauga, ON

Greenblatt, J.H., Technical University of Nova Scotia, Halifax, NS

Groves, F.R. Jr., Louisiana State University, Baton Rouge, LA

Gunn, D.J., University College of Swansea, Swansea, U.K.

Guy, C., Ecole Polytechnique de Montréal, Montréal, Québec

Haile, J.M., Clemson University, Clemson, SC

Hamielec, A.E., McMaster University, Hamilton, ON

Harris, T.J., Queen's University, Kingston, ON

Harrison, D.P., Louisiana State University, Baton Rouge, LA

Hastaoglu, M.A., KFUPM, Dhahran, Saudi Arabia

Hayduk, W., University of Ottawa, Ottawa, ON

Hayes, B., Roundhill Road, Chapel Hill, NC

Hayes, R.E., University of Alberta, Edmonton, AB

Hayhurst, D.T., University of South Alabama, Mobile, AL

Hazlett, J.D., University of Western Ontario, London, ON

Heitz, M., Université de Sherbrooke, Sherbrooke, Québec

Helfferich, F.G., Pennsylvania State University, University Park, PA

Hempel, D.C., Universität Gesamthochschule Paderborn, Paderborn, Germany

Henein, H., University of Alberta, Edmonton, AB

Henson, M.A., DuPont Polymers, Wilmington, DE

Hepler, L.G., University of Alberta, Edmonton, AB

Higgins, T.J., University of Wisconsin-Madison, Madison, WI

Hill, G.A., University of Saskatchewan, Saskatoon, SK

Himmelblau, D.M., University of Texas at Austin, Austin, TX

Hiskey, J.B., University of Arizona, Tucson, AR

Ho, T.-C., Lamar University, Beaumont, TX

Hoffman, T., SUNCOR, Sarnia, ON

Hollands, K.G.T., University of Waterloo, Waterloo, ON

Hollinger, H.B., Rensselaer Polytechnic Institute, Troy, NY

Hounslow, M.J., University of Cambridge, Cambridge, U.K.

Howard, J.B., M.I.T., Cambridge, MA

Howard, J.H.G., University of Waterloo, Waterloo, ON

Hrymak, A.N., McMaster University, Hamilton, ON

Hsieh, J.S., Georgia Institute of Technology, Atlanta, GA

Hsu, C.C., Queen's University, Kingston, ON

Huang, R.Y.-M., University of Waterloo, Waterloo, ON

Hudgins, R.R., University of Waterloo, Waterloo, ON

Hudson, J.H., Richmond Cres., Saskatoon, SK

Hummel, R.L., University of Toronto, Toronto, ON

Isaacs, E., Alberta Research Council, Edmonton, AB

Jeje, A.A., University of Calgary, Calgary, AB

Jenkins, R.G., University of Cincinnati, Cincinnati, OH

Jones, A.G., University College London, London, U.K.

Jones, G.L., Echo Trail, Atlanta, GA

Jonsson, K.A.-S., University of Lund, Lund, Sweden

Joseph, B., Washington University, St. Louis, MO

Kaliaguine, S., Université Laval, Québec, Québec

Kalogerakis, N.E., University of Calgary, Calgary, AB

Kantz, A., Novacor Research and Technology Corp., Calgary, AB

Karri, S.B.R., Particulate Solid Research, Chicago, IL

Kavany, M., University of Michigan, Ann Arbor, MI

Kawaji, M., University of Toronto, Toronto, ON

Kawakami, K., Kyushu University, Fukuoka, Japan

Kawase, Y., Toyo University, Kawagoe, Saitama, Japan

Kennedy, A.M., University of Canterbury, Christchurch, New Zealand  
 Keskin, A., McGill University, Montreal, Quebec  
 King, C.J., University of California at Berkeley, Berkeley, CA  
 Kleinstreuer, C., North Carolina State University, Raleigh, NC  
 Klinzing, G., University of Pittsburgh, Pittsburgh, PA  
 Kivana, D., Ecole Polytechnique de Montréal, Montréal, Québec  
 Koch, D.L., Cornell University, Ithaca, NY  
 Kohn, J.P., University of Notre Dame, Notre Dame, IN  
 Kosaric, N., University of Western Ontario, London, ON  
 Kresta, S.M., University of Alberta, Edmonton, AB  
 Krieger-Brockett, B., University of Washington, Seattle, WA  
 Kruus, P., Ottawa-Carleton Chemistry Institute, Ottawa, ON  
 Kudra, T., McGill University, Montreal, Quebec  
 Kung, H.H., Northwestern University, Evanston, IL  
 Kyle, B.G., Kansas State University, Manhattan, KS  
 Lacoste, G., Ecole Nationale Supérieure d'Ingenieurs de Génie Chimique, Toulouse, France  
 Lacroix, R., Université Laval, Québec, Québec  
 Lafleur, P.G., Ecole Polytechnique de Montréal, Montréal, Québec  
 Lakshmanan, V.I., Ortech International, Mississauga, ON  
 Lapicque, F., E.N.S.I.C., I.N.P.L., Nancy, France  
 Laplante, A.R., McGill University, Montreal, Quebec  
 Lee, P.L., University of Queensland, Queensland, Australia  
 Lee, S.L.P., Atomic Energy of Canada Ltd., Mississauga, ON  
 Legrand, J., I.U.T., Saint-Nazaire, France  
 Legros, R., Ecole Polytechnique de Montréal, Montréal, Québec  
 Lemert, R.M., University of Toledo, Toledo, OH  
 Lenoble, W.J., State University of New York at Stony Brook, Stony Brook, NY  
 Levien, K.L., Oregon State University, Corvallis, OR  
 Levine, S., University of British Columbia, Vancouver, BC  
 Li, L., University of Texas, Austin, TX  
 Lim, P.K., North Carolina State University, Raleigh, NC  
 Liou, C.-T., National Taiwan Institute of Technology, Taipei, Taiwan, Republic of China  
 Lipscomb, G.G., University of Cincinnati, Cincinnati, OH  
 Lira, C.T., Michigan State University, East Lansing, MI  
 Lister, J.B., EPFL, Lausanne, Switzerland  
 Littman, H., Rensselaer Polytechnic Institute, Troy, NY  
 Lucia, A., Clarkson University, Potsdam, NY  
 Luckos, A., Technical University of Silesia, Gliwice, Poland  
 Luks, K.D., University of Tulsa, Tulsa, OK  
 Luus, R., University of Toronto, Toronto, ON  
 Lyberatos, G., University of Florida, Gainsville, FL  
 Lynch, D.T., University of Alberta, Edmonton, AB  
 Ma, Y.H., Worcester Polytechnic Institute, Worcester, MA  
 MacGregor, J.F., McMaster University, Hamilton, ON  
 Mahabadi, H.K., Xerox Research Centre of Canada, Mississauga, ON  
 Marchildon, L., Université du Québec à Trois Rivières, Trois Rivières, Québec  
 Marcos, B., Université de Sherbrooke, Sherbrooke, Québec  
 Markel, E.J., University of South Carolina, Columbia, SC  
 Marlin, T.E., McMaster University, Hamilton, ON  
 Masliyah, J.H., University of Alberta, Edmonton, AB  
 Massoth, F.E., University of Utah, Salt Lake City, UT  
 Mather, A.E., University of Alberta, Edmonton, AB  
 Matteson, M.J., Georgia Institute of Technology, Atlanta, GA  
 Maye, J.-P., Université de Poitiers, Poitiers, France  
 Mayinger, F., Technische Universität München, München, Germany  
 McAvoy, T.J., University of Maryland, College Park, MD  
 McCourt, F., University of Waterloo, Waterloo, ON  
 McCoy, B.J., University of California at Davis, Davis, CA  
 McIntosh, A.R., Esso Petroleum Canada Ltd., Edmonton, AB  
 McKay, D.J., COMINCO Ltd., Trail, BC  
 McLaughlin, J.B., Clarkson University, Potsdam, NY  
 McNulty, K.J., T.Koch Engineering Research, Wilmington, MA  
 Mehmetoglu, T., Middle East Technical University, Ankara, Turkey  
 Mehrotra, K., University of Calgary, Calgary, AB  
 Meisen, A., University of British Columbia, Vancouver, BC  
 Merchuk, J.C., Ben Gurion University of the Negev, Beer Sheva, Israel  
 Michalopoulou, A.C., University of Patras, Patras, Greece  
 Midoux, N., E.N.S.I.C., Nancy, France  
 Miller, A., Illinois Institute of Technology, Chicago, IL  
 Mitsoulis, E., University of Ottawa, Ottawa, ON  
 Miyahara, T., Okayama University, Okayama, Japan  
 Moffat, J.B., University of Waterloo, Waterloo, ON  
 Molnar, R., Energy Mines and Resources, Ottawa, ON  
 Moore, R.G., University of Calgary, Calgary, AB  
 Morari, M., California Institute of Technology, Pasadena, CA  
 Mujumdar, A.S., McGill University, Montreal, Quebec  
 Mullins, J.C., Clemson University, Clemson, SC  
 Nandakumar, K., University of Alberta, Edmonton, AB  
 Narayan, R., Michigan Biotechnology Institute, Lansing, MI  
 Nasr-El-Din, H.A., Saudi Aramco, Dhahran, Saudi Arabia  
 Neale, G., University of Ottawa, Ottawa, ON  
 Neufeld, R.J., McGill University, Montreal, Quebec  
 Nienow, A.W., University of Birmingham, Birmingham, U.K.  
 Nikolaou, M., Texas A & M University, College Station, TX  
 Noda, K., Shizuoka University, Hammatsu, Japan  
 Norrby, L.J., Royal Military College of Canada, Kingston, ON  
 O'Connell, J.P., University of Virginia, Charlottesville, VA  
 O'Driscoll, K.F., University of Waterloo, Waterloo, ON  
 Obot, N.T., Clarkson University, Potsdam, NY  
 Okada, K., Okayama University of Science, Okayama, Japan  
 Olazar, M., Universidad del País Vasco, Bilbao, Spain  
 Oloman, C.W., University of British Columbia, Vancouver, BC  
 Oscarson, J.L., Brigham Young University, Provo, UT  
 Otto, F.D., University of Alberta, Edmonton, AB  
 Overend, R.P., National Renewable Energy Laboratory, Golden, CO  
 Palazoglu, A., University of California at Davis, Davis, CA  
 Papangelakis, V.G., University of Toronto, Toronto, ON  
 Paras, S.V., Aristotle University of Thessaloniki, Thessaloniki, Greece  
 Park, J.Y., University of Idaho, Moscow, ID  
 Park, S., KAIST, Taejon, South Korea  
 Parks, D., Novacor Chemicals, Calgary, AB  
 Pedersen, H., Rutgers University, Piscataway, NJ  
 Pegg, M.J., Technical University of Nova Scotia, Halifax, NS  
 Pelton, R.H., McMaster University, Hamilton, ON  
 Peng, D.-Y., University of Saskatchewan, Saskatoon, SK  
 Penlidis, A., University of Waterloo, Waterloo, ON  
 Pereira, C.J., W.R. Grace & Co., Columbia, MD  
 Perlmuter, D.D., University of Pennsylvania, Philadelphia, PA  
 Phillips, M.J., University of Toronto, Toronto, ON  
 Pinder, K.L., University of British Columbia, Vancouver, BC

Piron, D.L., Ecole Polytechnique de Montréal, Montréal, Québec

Pitzer, K.S., University of California at Berkeley, Berkeley, CA

Poling, B.E., University of Toledo, Toledo, OH

Pontor, A.B., University of Southwestern Louisiana, Lafayette, LA

Prausnitz, J.M., University of California at Berkeley, Berkeley, CA

Pritzker, M., University of Waterloo, Waterloo, ON

Prud'Homme, M., Ecole Polytechnique de Montréal, Montréal, Québec

Pruss, J., Universität Gesamthochschule Paderborn, Paderborn, Germany

Puttagunta, V.R., Lakehead University, Thunder Bay, ON

Qutubuddin, S., Case Western Reserve University, Cleveland, OH

Raghavan, G.S.V., MacDonald College of McGill University, Ste. Anne de Bellevue, Quebec

Raithby, G.D., University of Waterloo, Waterloo, ON

Rajan, V.S.V., Alberta Research Council, Edmonton, AB

Ramachandran, P.A., Washington University, St. Louis, MO

Rao, D.P., Indian Institute of Technology, Kanpur, India

Rao, M., University of Alberta, Edmonton, AB

Rasmussen, P., Technical University of Denmark, Lyngby, Denmark

Ratti, C., McGill University, Montreal, Quebec

Recasens, F., Universitat Politecnica de Catalunya, Barcelona, Spain

Reilly, P.M., University of Waterloo, Waterloo, ON

Reklaitis, G.V., Purdue University, West Lafayette, IN

Rhedey, P., Alcan International, Kingston, ON

Rhodes, E., University of Calgary, Calgary, AB

Rice, R.W., Clemson University, Clemson, SC

Rice, W.J., Villanova University, Villanova, PA

Rielly, C.D., University of Cambridge, Cambridge, U.K.

Rinker, R.G., University of California at Santa Barbara, Santa Barbara, CA

Robillard, L., Ecole Polytechnique de Montréal, Montréal, Québec

Robinson, D.B., D.B. Robinson & Associates Ltd., Edmonton, AB

Rochelle, G.T., University of Texas at Austin, Austin, TX

Rohani, S., University of Saskatchewan, Saskatoon, SK

Rosen, M.J., SUNY Brooklyn College, Brooklyn, NY

Rousseau, R.W., Georgia Institute of Technology, Atlanta, GA

Roy, C., Université Laval, Sainte-Foy, Québec

Rudin, A., University of Waterloo, Waterloo, ON

Rumschitzki, D.S., City College of New York, New York, NY

Russell, M.E., Northern Illinois University, DeKalb, IL

San, K.-Y., Rice University, Houston, TX

Sandall, O.C., University of California at Santa Barbara, Santa Barbara, CA

Sandler, S.I., University of Delaware, Newark, DE

Sani, R.L., University of Colorado, Boulder, CO

Satterfield, C.N., M.I.T., Cambridge, MA

Scharer, J., University of Waterloo, Waterloo, ON

Schiesser, W.E., Lehigh University, Bethlehem, PA

Schmidkne, N.W., Norbert W. Schmidkne & Associates Ltd., Kitchener, ON

Schumpe, A., Universität Erlangen-Nürnberg, Erlangen, Germany

Scott, D.S., University of Waterloo, Waterloo, ON

Scott, K., University of Newcastle-Upon-Tyne, Newcastle-Upon-Tyne, U.K.

Scott, T., Oak Ridge National Laboratory, Oak Ridge, TN

Seader, J.D., University of Utah, Salt Lake City, UT

Sefton, M.V., University of Toronto, Toronto, ON

Seider, W.D., University of Pennsylvania, Philadelphia, PA

Selucky, M.L., University of Alberta, Edmonton, AB

Senkan, S.M., University of California at Los Angeles, Los Angeles, CA

Shah, G.C., Fina Oil Corp., Laporte, TX

Shah, S.L., University of Alberta, Edmonton, AB

Shah, Y.T., Drexel University, Philadelphia, PA

Shaw, J.M., University of Toronto, Toronto, ON

Shook, C.A., University of Saskatchewan, Saskatoon, SK

Siddiqui, H., Rohm and Haas Co., Bristol, PA

Siegel, M., University of Waterloo, Waterloo, ON

Silveston, P.L., University of Waterloo, Waterloo, ON

Simandl, J., McGill University, Montreal, Quebec

Singh, B., Lakehead University, Thunder Bay, ON

Skelland, A.H.P., Georgia Institute of Technology, Atlanta, GA

Slattery, J.C., Northwestern University, Evanston, IL

Smith, J.M., University of Surrey, Guildford, Surrey

Smith, J.W., University of Toronto, Toronto, ON

Smith, K.J., University of British Columbia, Vancouver, BC

Somorjai, G.A., University of California at Berkeley, Berkeley, CA

Soroush, M., University of Michigan, Ann Arbor, MI

Spedding, P.L., Queen's University of Belfast, Belfast, Northern Ireland

Speight, J.G., Western Research Institute, Laramie, WY

Stanford, T.G., University of South Carolina, Columbia, SC

Stanislav, J.F., University of Calgary, Calgary, AB

Storey, C., Loughborough University of Technology, Loughborough, U.K.

Stover, N., Nova Scotia Research Foundation Corp., Dartmouth, NS

Streat, M., Loughborough University of Technology, Loughborough, U.K.

Strong, A., University of Waterloo, Waterloo, ON

Sun, A.C., University of Pennsylvania, Philadelphia, PA

Suppiah, S., AECL Research, Chalk River, ON

Svrcek, W.Y., University of Calgary, Calgary, AB

Taitel, Y., Tel Aviv University, Ramat Aviv, Israel

Talbot, J.B., University of California at San Diego, La Jolla, CA

Tamon, H., Kyoto University, Kyoto, Japan

Tan, C.-S., National Tsing Hua University, Hsinchu, Taiwan, Republic of China

Tanguy, P.A., Université Laval, Québec, Québec

Taylor, R., Clarkson University, Potsdam, NY

Tecante, A., Universidad Nacional Autónoma de Mexico, Mexico, Mexico

Teja, A.S., Loughborough University of Technology, Loughborough, U.K.

Ternan, M., CANMET, Ottawa, ON

Thibault, J., Université Laval, Québec, Québec

Thompson, K., University of Michigan, Ann Arbor, MI

Thring, R.W., University of New Brunswick, Fredericton, NB

Tien, C., Syracuse University, Syracuse, NY

Tollefson, E.L., University of Calgary, Calgary, AB

Tran, H.N., University of Toronto, Toronto, ON

Trass, O., University of Toronto, Toronto, ON

Treble, M.A., University of Calgary, Calgary, AB

Tsamopoulos, J.A., SUNY at Buffalo, Amherst, NY

Tsezos, M., National Technical University of Athens, Athens, Greece

Ulrich, R.K., University of Arkansas, Fayetteville, AR

Vafai, K., Ohio State University, Columbus, OH

van Heiningen, A.P., University of New Brunswick, Fredericton, NB

Varma, Y.B.G., Indian Institute of Technology, Madras, India

Veljković, M., Syncrude Canada Ltd., Edmonton, AB

Vera, J.H., McGill University, Montreal, Quebec

Versteeg, G.F., Twente University of Technology, Enschede, The Netherlands  
Verwaerde, M., Institut Français du Pétrole, Rueil-Malmaison, France  
Volesky, B., McGill University, Montreal, Quebec  
Von Brachel, G., Theodor-PYCS, Essen, Germany  
Vossoughi, S., University of Kansas, Lawrence, KS  
Wakao, N., Yokohama National University, Yokohama, Japan  
Walawender, W.P., Kansas State University, Manhattan, KS  
Waldie, B., Heriot-Watt University, Edinburgh, Scotland  
Wang, M.-L., National Tsing Hua University, Hsinchu, Taiwan, Republic of China  
Wanke, S.E., University of Alberta, Edmonton, AB  
Warnecke, H.J., Universität Gesamthochschule Paderborn, Paderborn, Germany  
Wassink, B., University of Calgary, Calgary, AB  
Wayman, M., University of Alberta, Edmonton, AB  
Weckman, E., University of Waterloo, Waterloo, ON  
Weiss, R.A., University of Connecticut, Storrs, CT  
Westerterp, K.R., Twente University of Technology, Enschede, The Netherlands  
Williams, M.C., University of Alberta, Edmonton, AB  
Williams, R.A., University of Exeter, Exeter, U.K.  
Winter, H.H., University of Massachusetts, Amherst, MA  
Wissbrunt, K., Euclid Ave., Summit, NJ  
Wojciechowski, B.W., Queen's University, Kingston, ON  
Wong, C.W., Chung Shan Institute of Science and Technology, Lung-Tan, Taiwan, Republic of China  
Wood, P.E., McMaster University, Hamilton, ON  
Wood, R.K., University of Alberta, Edmonton, AB  
Worden, R.M., Michigan State University, East Lansing, MI  
Wynnyckyj, J.R., University of Waterloo, Waterloo, ON  
Ybarra, R.M., University of Missouri-Rolla, Rolla, MO  
Yuan, W.-K., East China University of Chemical Technology, Shanghai, People's Republic of China  
Zhu, J., University of Western Ontario, London, ON

## Keyword Index — 1993

absorption	195	channel flow	168
absorption process	533	char combustion	3,10
acentric factor	332	chemical process optimization	634
acid dissolution	790	chemical process simulation	34
acid gas	264	chemical reactions	667
activated alumina	704	Claus reaction	704
activated carbon	925	Claus reaction furnace	711
activated carbon catalyst	75	cloud point	982
activity coefficient model	940	continuous pyrolysis	866
aeration	195	coprocessing	866
agglomeration	20	co-processing	383
aggregation and precipitation kinetics	689	coal combustion	3,10
air bubble size	269	coal devolatilization	10
air-water solution	269	coal tar phenolics	256
airlift bioreactor	101,419	coke	401
alcohol	464,828	coke formation	873
alginate	652	coke inhibition	873
alkylation	756	Cold Lake bitumen	689
alumina and titania catalysts	392	combustion	3
analysis of variance	605	concentration forcing	477
analytical effectiveness factor	901	concentric annuli	642
aqueous amine	264	condensation	35
aqueous solutions	141	conical spouted beds	189
aromatic hydrocarbons	383	consecutive reactions	477
asphaltene agglomeration	689	continuous thermodynamics	130
autocatalytic	974	control performance assessment	605
average deviations	489	coprocessing	746
batch crystallization	539	correlation	685
Beer-Lambert law	977	cotton milling	880
binary interaction parameter	322	cotton wax	880
binary liquid mixtures	124	Couette flow	312
biofilm	901	countercurrent extraction	256
biomass	549	courant limite de diffusion	174
bioreactor	766	critical opalescence	982
biosorption kinetics	652	crystal formation	238
bitumen	447	crystallisation	68
bitumen-diluent interaction	689	crystallization kinetics	539
blow moulding	824	CSD	539
boundary layer	472	cubic equation of state	292
bubble column	460,464,468	cumene	756
bubble column with internals	468	cyclones	20
bubble dynamics	183	delta impeller	195
bubble temperature	828	densitometer	269
bubbles	195	dépollution métallique	174
calcination of phosphate	771,784	design	711
calcium carbonate	481	developing flow	642
calcium chloride	986	deviations from Beer's law	977
calcium hydroxide	934	die swell	161
calcium sulfate	934	diffusion	652
calcium sulfide	934	diffusivity	20
CANMET residue	866	dilute/dense phase regimes	177
canola protein	689	dimensionnement	174
capillary flow	347	direct causticization	892
capillary flows	833	dispersed air	269
capital costs	575	distillation control	617
carbon dioxide	892	divided flow	525
carbon monoxide	892	dolomite	401
carbon monoxide methanation	202	drag coefficient	646,837
catalytic oxidation	75	drop formation	366
cell model	646	drop free fall	366
cellobiose hydrolysis	880	dynamic programming	451
cellulose hydrolysis	880	écoulement tourbillonnaire	299
chainlike molecules	591	effect on gas holdup	817
		effective diffusivity	734
		effective slip	347

electric field effects	366
electrocatalysis	564
electrocatalyst	570
electrochemical oxalate oxidation	218
électrochimie	174
electrodeposition	570
électrodéposition	174
electrohydrodynamics (EHD)	366
electrolytes	68
elution	925
empirical	711
emulsions	852
end corrections	833
energy consumption	507
enrichment of phosphate	771,784
entrainment	844
entrée tangentielle	299
entry length	472
environmental	575
enzymatic turnover number	917
enzyme stability	917
equation of state	130,322,327,591,805,828,940
equilibrium	711
equilibrium model	256
espace annulaire	299
esterification	485
ethane-1,2-diol	124
ethanol	986
ethanol production	901
excess pressure losses	833
exchanger design	525
external surface	558
extrudate	147,161
extruder	411
factorial design	485
falling film absorption	533
feedforward/feedback control	605
fermentation control	426
ferrisilicate of MFI structure	756
fibres	667
film vaporization	54
finite difference	472
finite element	161
finite elements	472
fixed bed	646
flooding	844
flow	967
flow pattern	657
flow regimes	35
flow relaxation	837
flow visualization	42
flowsheeting	955
flue gas desulfurization	934
fluidization	514
fluidized bed	549
fluidized bed coal combustion	83
fluidized-bed combustion	10
fly ash	934
forced convection	168
foulant	925
fractional gas hold-up	226
fractionation	116
free energy of formation	489
free radical polymerization	411
free surface	161
freeboard	514
friction factor	183,971
gas dispersion	278
gas flow model	189
gas hold-up	468
gas holdup	464
gas holdup,	817
gas-liquid contact	497
gas recirculation	278
gas sparging	63
gas-liquid mass transfer	859
gas-liquid reactors	226,278
gas-solid reactions	734
gasification	401,549
global optimization	451
glucose degradation	880
glucose oxidase	917
gold cyanide	925
grain model	481
group contribution method	332
growth synchrony	426
halogenated hydrocarbons	940
heat and mass transfer	54
heat transfer	514
heats of evaporation	292
heavy crude oil	447
heavy oil processing	746
helical coil	468,971
helical ribbon screw impeller	859
Henry's constant	327
Herschel-Bulkley model	147
heterogeneous nucleation	238
high concentrations	977
holdup	94,497,844
homogeneous reaction	974
hydrates	68
hydration number	948
hydrocarbons	437
hydrodesulfurization	725
hydrodynamics	419,497
hydrogen evolution	570
hydrogen sulfide	75
hydrogen sulphide	327,377
hydrogen sulphide oxidation	704
hydrolysis of COS	392
hydroprocessing catalyst	725
HZSM-5	383
impinging streams	771,784
implicit estimation	322
inactivation	917
inclined line	177
inclined tube	35
inflation	824
informational distance	955
input multiplicity	477
instationnarity	507
interfacial area	419
interfacial tension	802
iodide oxidation	761
iodine partition coefficient	761
ion exchange resin	821
ion-solvent interaction coefficient	948
isobaric vapor-liquid equilibrium	986
isoelectric precipitation	689

jet loop reactor	94
jet spouted bed	189
jojoba oil	485
key components	711
kinematic viscosity	124
kinetic model	925
kinetic models	392
kinetics	68,107,392,756,790,892
labour and material cost factors	575
laser light scattering technique	982
LDA	42
lead anodes	218
lignin	107
lignin recovery	116
lime	401
limestones	244,734
liquefaction	107
liquid film mass transfer coefficient	685
liquid holdup	685
liquid-liquid systems	366
low Reynolds number closure	28
lower limiting viscosity	329
magnetic fractions	790
mass transfer	3,63,101,269,366
mass transfer coefficient	464
mass transport	652
mathematical simulation	256
mechanically agitated reactors	226
mechanistic models	514
medium consistency	667
medium pressure	75
metals recovery	652
methacrylates	411
methanation catalyst	202
methanation kinetics	202
methanation rate law	202
methane	68
methanol	986
micromixing	967
mixed convection	54
mixing	101,667,967
mixing time	507
model	83
modélisation numérique	299
modelling	269,549
modified Bagley method	833
modified ZSM-5	558
molar refraction	489
multi-cycle adsorption	925
multi-input single-output	605
mutual solubility	982
<i>n</i> -Hexadecane	327
<i>n</i> -paraffins	805
nanofiltration	377
naphtha pyrolysis	873
narrow channel	657
natural gas sweetening	75
nickel electrode	564
nickel-cobalt/iron	570
N,N-dimethylformamide	124
non-Darcy flow	168
non-isothermal flow	147
non-Newtonian flow	147,646
non-Newtonian fluids	168,183,859
non-Newtonian liquid	468
non-sharp flowsheets	955
nonhydrogenative processing	746
nuclear reactor safety	761
oil characterization	130
oil droplets	852
on-line measurement	977
on-line monitoring	911
optimal control of nonlinear systems	451
optimisation	485
organic compounds	332
organics	377
oxygen evolution	564
oxygen-mediated inactivation	917
packed bed	646
para-selectivity	558
parameter estimation	539,625
parison	824
particle size distribution	689
particulate movement	337
periodic operation	911,974
perturbed hard-chain	591
petroleum mixtures	437
pH effect	911
phase behavior	130
phase inversion	844
phase transfer catalyst	802
phenol	802,828
physical treatment	575
pitched blade impeller	42
Pitzer model	141
plasma	866
pneumatic transport	177
polymer adsorption	347
polymerization reactor	411
pore structure	244
porous medium	168
potassium chloride	539
power consumption	497
predictive control	617
prehydrolysis	116
pressure	319
pressure	447
pressure drop	460,646,657
pressurized fluidized-bed combustion (PFBC)	244
product inhibition	901
productivity	766
programmed parisons	824
pulp suspensions	667
pulps	667
pulse response	312
pyrolysis oil	383
random packed columns	685
réacteur catalytique à lit fixe arrosé	319
réacteur tronconique	174
reaction electrodeposition	564
reaction kinetics	3
reaction mechanism	790
reactions	209
réactions endothermiques de solides	209
réactions quasi-isothermes	209
reactor fouling	873
reactor volume	426
reactors	278
reciprocating plate	464
reciprocating plate column	497,817

recovery	689	surface nucleation	328
recovery and emissions	711	surface rewetting	358
reduction	892	surface treatment	347
refractive index correction	42	suspensions	667,852
regenerative sulfur capture	83	synthetic sorbent	83
residence time	337	Teflon coated catalyst	704
residence time distribution	312	temperature	447
reversed flow	94	température seuil	209
robustness	617	tetralin	107
rotary dryer	337	thermal decomposition	481
rotating drum	337	thermal effectiveness	525
salt effect	986	thermolysis	107
salt solution	948	thermomechano-solvolytic treatment	116
salts	377	thickness	824
saturated enthalpies	292	titanium dioxide	704
saturated volumes	292	toluene disproportionation	558
screen plate	460	transfert de matière	299
scrubber solution	377	transition ruisseau/pulsé	319
self-tuning control	625	trickle-bed reactor	821
separated flow model	460	tube bundles	63
separation	377	tubular reactor	477
separation schemes	955	turbulence	667
sequential modular approach	634	turbulence models	28
series reaction	974	turbulent flow	971
shrinking-core model	734	turbulent fluidized bed	3
sodium sulfate	892	two-fluid model	358
sodium sulfide	892	two-phase flow	35,460,657
sodium titanate	892	unsteady flow	837
sodium-potassium chlorides	141	unsteady jet	507
solid particles	817	upflow reactor	821
solid-gas reaction	481	upgrading	383,746
solids	852	upper limiting viscosity	329
solubilities	141	vapor-liquid equilibria	828
solubility	264,327	vapor-liquid equilibrium	805,940
solubility of CO <sub>2</sub> /ethane	805	vertical transport	177
solvation number	948	viscoelasticity	667
solvolysis	116	viscoplastic fluids	642
sparger design	226	viscosity	437,447,852,948
spectrometry	977	visualization	967
sphere	837	void fraction	657
spinning sparger	419	wall mass transfer	28
square die	161	water	986
steady jet	507	water electrolysis	570
stirred tank	42,195	wavy film flow	533
stirred tanks	226	wetproofed catalyst	704
stirred vessel	278	Wirz extractor	844
sublimation	238	X-ray photoelectron spectroscopy	725
substrate concentration	766	xanthan gum fermentation	101
sulfate formation	725	xylose fermentation	911
sulfation	244,734	yield	477
sulfur dioxide	934	yield stress	147
sulfur recovery	75	zeolites	756
sulphur	401	zero-shear-rate viscosity	329
supersaturation	238	zinc ferrite	790
surface effects	347	<i>Zymomonas mobilis</i>	901

